

DATE: July 6, 1999

TO: Division of Water Supply Engineering Staff.

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Office of Water Programs

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FROM: Phase II/V Implementation Committee  
Division of Water Supply Engineering

SUBJECT: Water - Project Review - Well Development

Delete: Working Memo 774 Reference: Working Memo: 493, 784, and 766

Procedures for well development requests.

- Step1. Receive well site request.
- Step2. Provide Waterworks Permit Application. (Note: When applicable the requirement for a Comprehensive Business Plan shall be forwarded with the permit application since it is required to be completed before drilling a well at either a proposed new waterworks or at some existing waterworks due to significant noncompliance as referenced in Working Memo 784.)
- Step3. Preliminary Engineering Conference.
- Step4. Well site inspection:
  1. Complete well site inspection form (internal record). *Enclosure 1.*
  2. Provide (mail or hand to representative at meeting) and discuss well information package. *Enclosure 2.*
- Step5. Issue well site approval letter. *Enclosure 3.*

Additional considerations:

- Under Direct Influence of Surface Water evaluation.
- Vulnerability assessment regarding synthetic organic chemicals.
- Discussion of waiver assessment.

Listing of enclosures:

- Enclosure 1. Well Site Inspection form.
- Enclosure 2. Construction of Public Water Supply Wells Information Package.
- A. Sequence for Developing a Groundwater Supply.
  - B. Well Casing and Grouting.
  - C. Well Completion Report Form.
  - D. Well Yield Report Form.
  - E. Bacteriological Sampling of New Wells.
  - F. Chemical, Physical, and Radiological Sampling of New Wells.
  - G. DCLS Sample Kits Request Form.
  - H. Private Certified Laboratories Listing.
  - I. Drinking Water Standards.
  - J. Well Dedication Document.
- Enclosure 3. Well Site Approval Letter
- Enclosure 4. Optimal Procedure for New Well Development

Attachments that can accompany the Well Site Approval Letter:

- Sketch / Map of site.
- Sample dedication document.
- Possibly Construction of Public Water Supply Wells Information Package if not provided in the field.

# ENCLOSURE

STATUS OF WATERWORKS: Existing / Proposed
TYPE OF WATERWORKS: Comm / Non / NTNC

OWNER INFORMATION
Name:
Address:
Telephone:

SUBJECT:
Water-
Inspection date:        /        /
Inspected by:
Persons present:

WELL SITE CONFORMANCE WITH MANUAL OF PRACTICE		
Well lot selection criteria	Well Name/Designation	
Minimum 50 ft to property lines	Yes / No	Yes / No
All-weather access road available	Yes / No	Yes / No
Minimum 50 ft from sources of contamination:		
a. septic tank, pit privy, cesspool, barn yard, hog lot, etc.	Yes / No	Yes / No
b. petroleum or chemical tank or line	Yes / No	Yes / No
c. sewer line(s)	Yes / No	Yes / No
d. well of unknown or inadequate construction	Yes / No	Yes / No
Minimum 50 ft from surface runoff from sources of contamination shown as items a and b above		
Wellhead protected from 100 yr flood	Yes / No	Yes / No
Mark the box of the well site(s) to be approved.		

WELLHEAD AREA VULNERABILITY ANALYSIS (for well sites that pass the above evaluation)			
Are the following located in the wellhead area? (The wellhead area is 1000 ft radius from the well)	For "yes" answers, attach a map showing the location of the well and the facility. Identify the facility by type, name, and address.		
a. landfills or dumps; service stations; dry cleaners; large or small machinery repair shops; electronic repair shops; paint shops; light/heavy industry; other wells. Indicate in blanks.	Yes / No		Yes / No
b. sinkholes	Yes / No		Yes / No
Will geologic conditions direct contamination toward the well:			
a. at the surface?	Yes / No		Yes / No
b. at the subsurface?	Yes / No		Yes / No
Characterize the general land use as residential, industrial, livestock, crops, undeveloped, or other			

INFORMATION FOR THE APPROVED WELL SITE(S)				
Name	Geologic conditions	Lat./Long.	*Dev. test rec	Class

\*Bacteriological<sub>1</sub>, Inorganic chemical<sub>2</sub>, Metals<sub>3</sub>, Nitrate-Nitrite<sub>4</sub>, VOCs<sub>5</sub>, Radiological<sub>6</sub>, SOCs<sub>7</sub>

Well Site Name/Designation:
Location description:
Remarks:
Well site sketch:
Well Site Name/Designation:
Location description:
Remarks:
Well site sketch:

Excelsior

## CONSTRUCTION OF PUBLIC WATER SUPPLY WELLS

### INFORMATION PACKAGE

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Requirements for Comprehensive Business Plan is Attached. Yes ☐ Not Required

## SEQUENCE FOR DEVELOPMENT OF A GROUNDWATER SUPPLY

- 1) Owner submits a written request to the field office.
- 2) Provide Waterworks Permit Application package. (When applicable the requirement for a Comprehensive Business Plan shall be forwarded with the permit application since it is required to be completed before drilling a well at either a proposed new waterworks or at some existing waterworks due to significant noncompliance.)
- 3) District Engineer schedules a preliminary engineering conference.
- 4) Site Approval
  - a) A DWSE representative conducts on-site inspection.
  - b) Well site approval/disapproval letter is forwarded to the owner.
- 5) Well Drilling
  - a) Owner contracts with a licensed well driller.
  - b) Driller completes water well completion report.
  - c) Yield and drawdown test performed by driller or owner and documented.
  - d) Developmental samples for physical, chemical, radiological, and bacteriological analyses collected during yield and drawdown test submitted and sent to state lab or private certified lab.
- 6) Preliminary Engineering Report submitted (Business Plan if applicable)
- 7) Submission of Documents for Review and Approval
  - a) Three copies of detailed plans and specifications prepared by a P.E. licensed in Virginia.
  - b) Information described in 5b, 5c, and 5d.
  - c) Design information and calculations.
  - d) Recorded plat of well lot showing access road.
  - e) Recorded well lot dedication document.
  - f) Cross connection control and backflow prevention program.
- 8) Construction Permit
  - a) Project approval letter and construction permit issued prior to construction.
  - b) Following construction, owner has bacteriological samples collected to verify disinfection of facilities.
- 9) Operation Permit
  - a) A P.E. licensed in Virginia submits a statement of construction completion to District Engineer.
  - b) A DWSE representative conducts a final inspection.
  - c) If required, owner verifies that licensed operator is available.
  - d) An operation permit is prepared and forwarded to owner.

## WELL CASING AND GROUTING

### I. MINIMUM WELL CASING AND GROUTING DEPTHS

The following information is excerpted from the Virginia *Waterworks Regulations* (12 VAC 5-590-840). Please refer to the regulations for complete information.

Well Class	Casing Depth (feet)	Grouting Depth (feet)
I	100 minimum	100
II A	100 minimum	20
II B	50 minimum	50

### II. WELL GROUTING

- 1) Neat cement grout shall be used and shall consist of cement (API Spec. 10, Class G or Class B similar to ASTM C150 Type II) and water with not more than 6 gallons of water per 94 pound bag of cement. A maximum of 6% by weight of bentonite and 2% by weight of calcium chloride may be added.
- 2) Under exceptional conditions, as approved by the District Engineer, a mixture of cement, sand and water may be used.
- 3) Grouting shall be completed within 48 hours of well construction.
- 4) Grout shall be installed by means of continuous pressure from the bottom of the annular opening upward in one continuous operation.
- 5) The drilled hole shall allow for a minimum of 1½ inches of grout around the casing, including couplings.
- 6) If a pitless adapter is going to be used, the adapter shall be in place prior to grouting. This shall ensure compliance with 12 VAC 5-590-840A4b(4) and 12 VAC 5-590-840B8b(1) of the *Waterworks Regulations*.

### III. STEEL WELL CASING

(The following information is excerpted from the Virginia *Waterworks Regulations*, 12 VAC 5-590-840. Please refer to the regulations for complete information.)

- 1) The casing shall meet ASTM, ANSI, AWWA or API specifications and/or standards applicable to wells.



- 2) Dimensions for common casing sizes shall conform to the following:

Size (inches)	Diameter (inches)		Thickness (inches)	Pounds per foot	
	External	Internal		Plain ends	T & C
6	6.625	6.065	0.280	18.97	19.18
8	8.625	7.981	0.322	28.55	29.35
10	10.750	10.020	0.365	40.48	41.85

T & C means threads and couplings. Other sizes are listed in the *Waterworks Regulations*.

#### IV. PLASTIC WELL CASING

(This information is excerpted from the Virginia *Waterworks Regulations*, 12 VAC 5-590-840, and from other Health Department guidance documents.)

When approved for use, plastic casing:

1. Shall not be driven.
2. Shall be new material of PVC type 1120 (same as cell identification 12454). No other plastic may be used without prior approval.
3. Shall be NSF approved for or well casing use and marked accordingly.
4. Can meet or exceed ASTM F480 and have an impact classification of at least IC-1.
5. Shall not exceed depths listed in Table 1 - NOTE: total length of allowable casing does not include the required above surface lengths (minimum 12 inches above concrete apron). Exceptions may apply.
6. Shall not be used for wells within 100 feet of the storage of any solvents (gasoline, kerosene, etc.) and above average care must be taken to prevent well casing contact with solvents, either during construction or afterwards.
7. Shall be protected from exposure to sunlight via any sanitary and easily accessible method of well head protection that does not obscure the information required in item 8 as follows.
8. Shall show the manufacturers name and pipe markings related to schedule/SDR/DR, ASTM and NSF on the top twelve inches or more of well casing.
9. Should be a minimum of one inch greater inside diameter than the pump diameter.
10. Shall be handled and installed in accord with ASTM F480 with emphasis on:
  - a. All solvent welds shall be allowed sufficient drying time before installing in borehole - reference ASTM F480 Appendix x 1.

- b. The fact that the casing shall be adequately supported via stable backfill between the borehole and the casing wall, as thermoplastics have low ring strengths.
- c. The need for care to be taken when grouting as heat of hydration of curing cement may cause material deformation, or collapse resulting in an inferior well.

TABLE I

Maximum allowable depths (in feet) of Installation of Polyvinyl Chloride (PVC) Thermoplastic Water Well Casing Type 1120 (12454)

Schedule Number	Nominal Diameter of PVC 1120								
	2	2.5	3	3.5	4	5	6	8	10
Schedule 40-	560	740	485	265	291	194	143	99	74
Schedule 80-	1750	2040	1380	1085	912	646	395	400	340

SDR Number	All Diameters of PVC 1120
41	25
32.5	50
26	108
21	212
17	413
13.5	868

NOTE: All materials NSF approved for potable water use.

## WATER WELL COMPLETION REPORT (Certificate of Completion)

County/City \_\_\_\_\_

- Owner \_\_\_\_\_
- Well Designation of Number \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

- Drilling Contractor \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

PWS / ID No. \_\_\_\_\_

Tax Map I.D. No. \_\_\_\_\_

Subdivision \_\_\_\_\_

Section / Block / Lot / GPIN No(s): \_\_\_\_\_

Class Well \_\_\_\_\_

Long / Lat: \_\_\_\_\_

**WELL LOCATION:** \_\_\_\_\_ (feet/miles \_\_\_\_\_ direction) of \_\_\_\_\_ and \_\_\_\_\_  
feet/miles \_\_\_\_\_ (direction) of \_\_\_\_\_

(If possible please include map showing location marked)

- Date started \_\_\_\_\_
- Date completed \_\_\_\_\_
- Type rig \_\_\_\_\_

- 1. WELL DATA:** New \_\_\_\_\_ Rework \_\_\_\_\_ Deepened \_\_\_\_\_
- Total Depth \_\_\_\_\_ ft.
  - Depth to bedrock \_\_\_\_\_ ft.
  - Hole size (Also include reamed zones)
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
  - Casing size (I.D.) and material
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Material \_\_\_\_\_
    - Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Material \_\_\_\_\_
    - Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Material \_\_\_\_\_
    - Wt. per foot \_\_\_\_\_ or wall thickness \_\_\_\_\_ in.
  - Screen size and mesh for each zone (where applicable)
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Mesh size \_\_\_\_\_ Type \_\_\_\_\_
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Mesh size \_\_\_\_\_ Type \_\_\_\_\_
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Mesh size \_\_\_\_\_ Type \_\_\_\_\_
    - \_\_\_\_\_ inches to \_\_\_\_\_ ft.
    - Mesh size \_\_\_\_\_ Type \_\_\_\_\_

- Gravel pack
    - Size \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ ft.
    - Size \_\_\_\_\_ From \_\_\_\_\_ to \_\_\_\_\_ ft.
  - Grout
    - From \_\_\_\_\_ to \_\_\_\_\_ ft., Type \_\_\_\_\_
    - From \_\_\_\_\_ to \_\_\_\_\_ ft., Type \_\_\_\_\_
- 2. WATER DATA:** Water temperature \_\_\_\_\_
- Static water level (unpumped level-measured) \_\_\_\_\_ ft.
  - Stabilized measured pumping water level \_\_\_\_\_ ft.
  - Stabilized yield \_\_\_\_\_ gpm after \_\_\_\_\_ hours
  - Natural Flow: Yes \_\_\_\_\_ No \_\_\_\_\_ flow rate \_\_\_\_\_ gpm
  - Comment on quality \_\_\_\_\_
- 3. WATER ZONES:** From \_\_\_\_\_ To \_\_\_\_\_
- From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_
- From \_\_\_\_\_ To \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_
- 4. PUMP DATE:** Type \_\_\_\_\_ • Rated H.P. \_\_\_\_\_
- Intake depth \_\_\_\_\_ • Capacity \_\_\_\_\_ at \_\_\_\_\_ head
  - Model & No. \_\_\_\_\_
- 5. DISINFECTION:** Well disinfected \_\_\_\_\_ yes \_\_\_\_\_ no
- Date \_\_\_\_\_, Disinfectant used \_\_\_\_\_
- Amount \_\_\_\_\_, Hours used \_\_\_\_\_
- 6. ABANDONMENT:** Date \_\_\_\_\_
- Casing pulled yes \_\_\_\_\_ no \_\_\_\_\_ not applicable \_\_\_\_\_
- Chlorinated well (explain Method) \_\_\_\_\_
- \_\_\_\_\_
- Plugging grout From \_\_\_\_\_ to \_\_\_\_\_ material \_\_\_\_\_

8. I certify that the information contained herein is true and correct and that this well has been installed and constructed in accordance with the requirements for well constructions specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

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## WELL YIELD REPORT

System Name: \_\_\_\_\_ County: \_\_\_\_\_

Well Location: \_\_\_\_\_

Well Number: \_\_\_\_\_ Class: \_\_\_\_\_ Size: \_\_\_\_\_ (inches)

Depth: \_\_\_\_\_ (ft.) Static Water Level: \_\_\_\_\_ (ft.)

Test Pump Brand & Model: \_\_\_\_\_ HP: \_\_\_\_\_

Depth of Pump: \_\_\_\_\_ (ft.) Airline Length: \_\_\_\_\_ (ft.)

Name & Address of Company Performing Test: \_\_\_\_\_

Notes: All measurements are form top of casing

- (1) Water above pump, ft = air line pressure, psi x 2.31 + (pump depth - air line length)
- (2) Depth to water, ft = air line length, ft - (air line pressure, psi x 2.31 ft/psi)
- (3) Depth to water, ft = distance form top of casing to water level

Date & Time Test Started: \_\_\_\_\_

Time Interval	Time of reading	Air Line Pressure (psi)	Water Above Pump (ft)	Depth to Water (ft)	Draw Down Rate (ft/hr)	Meter Reading (gal)	Pump Discharge Rate (gpm)
Start							
5 min							
5 min							
5 min							
5 min							
5 min							
5 min							
15 min							
15 min							
15 min							
15 min							
15 min							
15 min							
1 hr							
1 hr							
1 hr							
1 hr							

[illegible]

WELL RECOVERY

Date: \_\_\_\_\_

Note:

- (1) Well recovery period shall start as the pump test ends
- (2) Well recovery period shall be 30-minute intervals for 2 hours

Time of Reading 30-minute Time interval	Air Lone Pressure (psi)	Water Above Pump (ft)	Depth of Water (ft)	Recovery (ft/30-minutes:

\_\_\_\_\_  
Signature

## BACTERIOLOGICAL SAMPLING OF NEW WELLS

(This information is excerpted from the Virginia *Waterworks Regulations* and other Health Department guidance documents. Please refer to the regulations or contact the District Engineer for complete information.)

- 1) The purpose of performing a series of bacteriological samples during the development of a new well is to determine if disinfection alone or disinfection plus other treatment is required.
- 2)

<u>Treatment required</u>	<u>Bacteriological Results</u>
None	MPN less than 3
Disinfection alone	MPN equal to or greater than 3 but less than 100
Disinfection plus other	MPN equal to or greater than 100
- 3) MPN stands for most probable number. It is a statistical term which represents the density of coliform bacteria in the water. The higher the MPN, the more contaminated the water.
- 4) Collection of Bacteriological Samples
  - a. Collect 20 samples for MPN analysis
  - b. Collect the samples during the last part of the yield and drawdown test at a minimum of one hour intervals. Contact the Engineering Field Office if the samples are to be collected at another time, frequency or for ground water under the influence evaluation.
- 5) The State Lab or a private lab may be used for the analyses. If the State Lab is to be used, please contact the Engineering Field Office for sampling instructions. If a private certified lab is to be used, it is the waterworks owner's responsibility to make all the necessary arrangements. Ask the private lab for verification of its certification status.
- 6) To help the State Lab recognize and properly process new well samples please contact the Environmental Engineering Field Office that has jurisdiction of the county where the new well is located. The Division of Consolidated Laboratory Services (DCLS) will ship bacteriological sampling kits for sample collection after you have contacted the Engineering Field Office. In addition, it is imperative that the person collecting the samples contact the DCLS in Richmond 24 hours in advance before delivering the collected samples to the laboratory.



Example of a Blank Bacteriological Sampling Form

ADDRESS CHANGE

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS 1 \_\_\_\_\_  
ADDRESS 2 \_\_\_\_\_  
CITY \_\_\_\_\_ ST \_\_\_\_\_ ZIP \_\_\_\_\_

PWSID: \_\_\_\_\_ City or County: \_\_\_\_\_ Lab Region: \_\_\_\_\_

Waterworks: \_\_\_\_\_

Location for the "PWSID".

Location for the "Location Code".

For DCLS Use Only

( ) ABS ( ) POS ( ) POS/F  
( ) UNSAT

Completion Date: \_\_\_\_\_

USE BALL POINT PEN ONLY PRESS FIRMLY

DGS-DCLS ☐ Check here if previous sample was confluent growth, TNTC, or turbid culture.

PWSID \_\_\_\_\_ Method: \_\_\_\_\_ Contaminant Code: \_\_\_\_\_

Collected By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: a.m. / p.m.

Telephone: ( ) \_\_\_\_\_

Sample Location: \_\_\_\_\_

Location Code: \_\_\_\_\_ Chlorine Residual: \_\_\_\_\_ Sample Type: \_\_\_\_\_ Lab ID: \_\_\_\_\_

Bottle contains Sodium Thiosulfate and is for DCLS use only.

Make sure that the "Method" is number "206-63" for "new well development"

Example of Bacteriological Form Completed.

ADDRESS CHANGE

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS 1 \_\_\_\_\_  
ADDRESS 2 \_\_\_\_\_  
CITY \_\_\_\_\_ ST \_\_\_\_\_ ZIP \_\_\_\_\_

PWSID: 3000000 City or County: SUFFOLK Lab Region: \_\_\_\_\_

Waterworks: Roger Waterworks by the Sea by the Sea

Mr. Roger Rabbit  
Roger Waterworks by the Sea by the Sea  
123456 Jessica Way  
Toontown, VA 12345

Use this for any changes to the address below.

The method will be "PA" for all routine sampling and "206-63" for "new well development."

Be sure to use 24-hour clock here to avoid any confusion when the sample has been received at the laboratory. See reverse side of form for instructions and example.

For DCLS Use Only

( ) POS

Completion Date: \_\_\_\_\_

USE BALL POINT PEN ONLY PRESS FIRMLY

DGS-DCLS ☐ Check here if previous sample was confluent growth, TNTC, or turbid culture.

PWSID 3000000 Method: MPN Contaminant Code: 3100 - COLIFORM

Collected By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: a.m. / p.m.

Telephone: ( ) \_\_\_\_\_

Sample Kitchen Sink by the Old Oak tree with a yellow ribbon tied around it in the Location: park with Harvey

Location Code: 0 0 3 Chlorine Residual: \_\_\_\_\_ Sample Type: Q Lab ID: \_\_\_\_\_

Bottle contains Sodium Thiosulfate and is for DCLS use only.

Review the information and make any changes above.

The sample type will be a type D for routine samples. Refer to the reverse side of this form for the correct "Sample Type" that you are collecting.

## **CHEMICAL, PHYSICAL, AND RADIOLOGICAL SAMPLING OF NEW WELLS**

- 1) The samples should be collected during the last portion of the yield and drawdown test. Other sampling times may be acceptable if the District Engineer concurs.
- 2) Special sample kits must be used. (Note: Nitrate and Nitrite sample containers must be unpreserved.) If you are using the State Lab in Richmond, contact the Virginia Department of Health's Environmental Engineering Field Office to receive the sample kits. The form shown on page 14 can be used to request sample kits from DCLS.
- 3) To help the State Lab recognize and properly process new well samples when they arrive at the lab in Richmond, please record the "PWSID" and the "Location Code" that which were provided by the Environmental Engineering Field Office. Please use the space reserved for PWSID number and Location Code for these numbers.
- 4) Private certified labs may also be used to perform the analyses. It is the waterworks owner's responsibility to make all arrangements with the private lab, including obtaining sample containers and instructions. A partial list of private certified labs is attached. Since certification status may change without notice, the waterworks owner should ask the private lab for verification of its certification status.
- 5) Inorganic, radiological, and physical parameters from the attached list entitled "Drinking Water Standards" must be analyzed for new wells.
- 6) For organics the following parameters must be analyzed for new wells.  
    < synthetic organics      --      A vulnerability assessment will determine which contaminants will be tested.  
    < volatile organics       --      Standard Methods 502 or 524 or equivalent
- 7) EPA approved analytical methods for drinking water must be used. The laboratory should be aware of the appropriate methods.

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF GENERAL SERVICES

DCLS SAMPLE KITS REQUEST FORM

Telephone: [804] 786-3756 [for SOC orders only [804] 786-7796] FAX: [804] 225-4070

PLEASE FILL IN INFORMATION BELOW:

PWSID Number							Location Code:				Quarter sample is due: _____	Year due: _____

Shipping Address.

Address \_\_\_\_\_

City \_\_\_\_\_ Zip + 4 \_\_\_\_\_ Phone [\_\_\_\_] \_\_\_\_\_

Contact person \_\_\_\_\_ Title \_\_\_\_\_

Waterworks Name: \_\_\_\_\_

Waterwork's shipping street address[for UPS delivery] \_\_\_\_\_

City \_\_\_\_\_ Zip + 4 \_\_\_\_\_ Phone [\_\_\_\_] \_\_\_\_\_

Attn: \_\_\_\_\_ Title \_\_\_\_\_

Kit	Group	Quantity
SOC001	Volatile Fumigants - Ethylene Dibromide and Dibromochloropropane	
SOC009	Synthetic Organic Pesticides, PCB's and Nitrogen Herbicides	
SOC065	Cyanide	
SOC113	Chlorinated Acid Herbicides	
SOC121	Benzo[a]pyrene, Di-(2-ethylhexyl)adipate and Di(2-ethylhexyl)phthalate	
SOC125	Carbamates	
SOC127	Diquat	

PLEASE CHECK APPROPRIATE BOX:

- ☐ Annual Compliance Monitoring of Drinking Water Required by the Virginia Department of Health  
☐ VPDES Permit-Wastewater Analysis-Monitoring of Sewage Effluent (please fax permit requirements)  
☐ Other (specify) \_\_\_\_\_

Kit	Group	Qty	Kit	Group	Qty
FLUORD	Fluoride		KIT-H	Trihalomethanes (THM)	
KI-UNN	Unpreserved Nitrite		KIT-I	Volatile Organic Chemicals. NonChlorinated	
N/A	Ammonia Nitrogen-Nutrient		KIT-II	Volatile Organic Chemicals, Chlorinated	
INO	Inorganic		KI-III	VOC Empty Vial - for VDH-OWP Prog.	
METALS	Metals		KIT-J	General Organic Scan [Extractables: non-Chlorinated]	
KIT-NN	Nitrate-Nitrite-Hardness		KIT-JJ	General Organic Scan [Extractables: Chlorinated]	
KIT-E	Radiological		KIT-L	Lead/Copper [request from VDH Office of Water Prog]	
KIT-F	Petroleum		WATEPU	*Water - Bacteriological, Public (w/form DGS-22-201)	
KIT-G	Phenols, Oil and Grease		WATENP	*Water - Bacteriological, Non-public (w/form LHS-154)	

\*Please contact the appropriate Lab in your area for bacteriological water kits. (See reverse side)

**SOC001: Method 551 for Volatile Fumigants - Ethylene Dibromide & Dibromochloropropane:**  
4 x 40mL vials, clear glass w/Tellon-faced silicone septa  
(Preservative) 4mg Sodium Thiosulfate

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**SOC009: Method 507/508 for Synthetic Organic Pesticides, PCB's and Nitrogen Herbicides:**  
2 x 250 mL bottles, Boston round, amber glass w/Telfon lined screw cap  
0.5 mL of 1 M sodium sulfite, ACS grade

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**SOC065: Method 335.2 for Cyanide:**  
1 x 1L opaque plastic bottle w/screw cap  
0.6 g ascorbic acid, ACS grade, 4 pellets sodium hydroxide, ACS grade

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**SOC113: Method 515.1 for Chlorinated Acid Herbicides**  
2 x 250 mL bottles, Boston round, amber glass with Telfon lined screw cap  
0.5 mL of a 1 M solution of sodium sulfite, ACS grade

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**SOC121: Method 525.2 for Benzo[a]pyrene, Di-(2-ethylhexyl)adipate and Di-(2-ethylhexyl)phthalate**  
2 x 1L bottles, Boston round, amber glass w/Telfon lined screw cap  
1 x 1L bottle w/blank water  
(Preservative) 40 to 50 mg Sodium Sulfite/6NHCL

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**SOC125: Method 531.1 for Carbamates**  
2 x 40 mL vials, amber glass w/Telfon-faced silicone septa  
1.2 mL of buffer (156 mL 2.5 M monochloroacetic acid  
w/100 mL of 2.5 M potassium acetate)  
3.6 mg sodium thiosulfate, ACS grade

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**SOC127: Method 549.1 for Diquat**  
2 x 250 mL bottles, wide mouth opaque plastic, w/screw cap  
2 drops concentrated sulfuric acid, ACS grade  
25 mg sodium thiosulfate, ACS grade

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**FLUORD: FLUORIDE**  
20-ML VIAL  
1 FLUORIDE FORM, PWSID LABEL  
1 MAILING SLEEVE, ABSORBENT PAD, ZIP LOCK BAG

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**KI-UNN: UNPRESERVED NITRITE**  
1 - 4 OZ UNPRESERVED NITRITE BOTTLE  
1 - NITRITE/NITRATE FORM, PWSID LABEL, RETURN ADDRESS LABEL  
1 - POLYFOAM COOLER

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**N/A: AMMONIA NITROGEN-NUTRIENT**  
1 - QUART CUBITAINER WITH LID  
1 - NUTRIENT FORM, 1 - PWSID LABEL, RETURN ADDRESS LABEL  
1 - POLYFOAM COOLER

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**INO: INORGANIC 1/2 GALLON BOTTLE W/CONTENTS**  
1 - 1/2 GALLON PLASTIC BOTTLE  
1 INORGANIC FORM, 1 PWSID LABEL RETURN LABEL  
#324 POLYFOAM MAILER

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**METALS: METALS**  
8 OZ. PLASTIC BOTTLE WITH NITRIC ACID  
1 METALS FORM, 1 PWSID LABEL,  
DCLS RETURN ADDRESS MAILING SLEEVE, ZIP LOCK BAG

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**KIT-NN: NITRATE/NITRITE**  
1- 4 OZ. PLASTIC BOTTLE WITH SULFURIC ACID  
NITRATE/NITRITE FORM, ID LABEL/RETURN LABEL, #318 POLYFOAM

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**KIT E: RADIOLOGICAL**  
1 GALLON CUBITAINER, 1 RADIOLOGICAL FORM  
ID LABEL/1 RETURN LABEL, 10x10x6 1/2 BOX

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**KIT F: PETROLEUM**  
1- 8 OZ. AMBER GLASS BOTTLE, 1- 40 ML CLEAR VIAL  
1 PETROLEUM FORM.  
2 ID LABELS/1 RETURN LABEL AND #318 POLYFOAM COOLER

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**KIT G: PHENOLS, OIL AND GREASE**  
2 - 1 QUART AMBER GLASS BOTTLES WITH SULFURIC ACID  
1 PHENOLS/OILGREASE FORM  
2 ID LABELS/ 1 RETURN LABEL AND #318 POLYFOAM COOLER

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**KIT H: TRIHALOMETHANES (THM)**  
2-40 ML AMBER VIAL WITH SODIUM THIOSULATE  
2-40 ML AMBER VIAL WITH DI WATER  
2 TRIHALOMETHANES FORMS  
4 ID LABELS/1 RETURN LABEL/1 INSTRUCTIONS  
1 ZIPLOC BAG/1 STYROFOAM VIAL HOLDER #6  
#324 POLYFOAM COOLER

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**KIT-I: VOLATILE ORGANIC CHEMICALS, NONCHLORINATED**  
2- 40 ML CLEAR VIAL WITH HYDROCHLORIC ACID  
2- 40 ML CLEAR VIAL WITH DI WATER AND HYDROCHLORIC ACID  
1 VOC FORMS  
4 ID LABELS/1 RETURN LABEL/1 INSTRUCTIONS  
1 ZIPLOC BAG/1 STYROFOAM VIAL HOLDER #6  
#324 POLYFOAM COOLER

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**KIT-II: VOLATILE ORGANIC CHEMICALS,-CHLORINATED**  
2-40 ML CLEAR VIAL WITH HYDROCHLORIC ACID  
2-40 ML CLEAR VIAL WITH DI WATER & HYDROCHLORIC ACID  
4 AMPULES WITH ASCORBIC ACID  
1 VOC FORMS  
4 ID LABELS/1 RETURN LABEL/1 INSTRUCTIONS  
1 ZIPLOC BAG/1 STYROFOAM VIAL HOLDER #6  
#324 POLYFOAM COOLER

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**KIT J: GENERAL ORGANIC SCAN [EXTRACTABLES:-NON- CHLORINATED]**  
2- 1 QUART AMBER GLASS BOTTLE  
1 EXTRACTABLE FORM  
2 ID LABELS/1 RETURN LABEL AND #325 POLYFOAM COOLER

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**KIT-JJ GENERAL ORGANIC SCAN [EXTRACTABLES - CHLORINATED]**  
2- 1 QUART AMBER GLASS BOTTLE WITH SODIUM THIOSULATE  
1 EXTRACTABLE FORM  
2 ID LABELS/1 RETURN LABEL AND #325 POLYFOAM COOLER

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**KIT L: LEAD/COPPER [REQUEST FROM VDH OFFICE WATER PROG]**  
1000 ML PLASTIC BOTTLE  
1 METALS FORM, 1 ID LABEL/1 RETURN LABEL/1 INSTRUCTIONS  
10X10X6 1/2 CARDBOARD BOX

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**WATEPU: WATER - BACTERIOLOGICAL, PUBLIC (W/FORM DGS-22-201)**  
1 PLASTIC BOTTLE WITH SODIUM THIOSULFATE  
1 BACTERIOLOGICAL INPUT FORM (DGS-22-201)  
DCLS ADDRESS MAILING SLEEVE, ABSORBENT PAD, ZIP LOCK BAG

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**WATENP: WATER - BACTERIOLOGICAL, NON-PUBLIC(W/FORM LHS-154)**  
1 PLASTIC BOTTLE WITH SODIUM THIOSULFATE  
1 NON-PUBLIC WATER FORM (LHS 154)  
DCLS ADDRESS MAILING SLEEVE, ABSORBENT PAD, ZIP LOCK BAG

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Send request to:

Commonwealth of Virginia  
Attn: Container Request - Room 138  
Commonwealth of Virginia  
Division of Consolidated Lab Services  
1 North 14th Street  
Richmond, VA 23219-3691

Phone [804] 786-3756 Fax [804] 225-4070  
Note: If faxing, fax top side only

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Southwest Regional Laboratory  
165 East Valley Street  
Abingdon, VA 24210

Phone [540] 676-5435

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Shenandoah Regional Laboratory  
77 Court Lane  
Luray, VA 22835

Phone [540] 743-6326

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VIRGINIA DEPT OF HEALTH  
DIVISION OF WATER SUPPLY ENGINEERING  
APPROVED LABORATORIES  
July 1, 1998-June 30, 1999

LAB ID NO.	LAB NAME	ADDRESS	CITY, STATE	ZIPCODE	CERT DATE	MIC 1,2,3,4,5	A 1,2,3,4	TM 1,2,3,4	F	NO3/ NO2	INORGANIC 1,2,3,4,5,6	P 1,2,3,4	H 1,2,3,4,5	PCB 1,2	THM	VOC 1,2,3,4	SOC 1,2,3,4	RAD
00001*	American Waterworks Service Co., Inc.	1115 S. Illinois St., Belleville Laboratory	Belleville, IL		98-07			C1234	C	C	C235	C1234	C12345	C1,2	C	C2,3,4	C123	
00002*	Express Analytical Testing Services Inc	P O Box 306	Chambersburg , PA		98-07	C2,3												
	American Medical Laboratories	14225 Newbrook Drive	Chantilly, VA		98-04	C2		C1										
00004*	Accutest Laboratories	2235 Route 130, Bldg B	Dayton, NJ		98-07			C1234	C	C	C123456	C1,2	C1,2		C	C2,3,4		
	Appomattox River Water Authority	21300 Chesdin Road	Petersburg, VA		97-05	C2,3			C		C1,5,6				C			
00006*	AMA Analytical Services	4485 Forbes Blvd	Lanham, MD		98-07		C	C1										
00007*	Analab, Inc.	205 Campus Plaza I, Raritan Center	Edison, NJ		98-07			C1234			C123456				C	C2,3,4		
00008*	Sewern Trent Labs Inc.	11 East Olive Road	Pensacola, FL		98-07			C1234	C	C	C12345	C1,2		C1	C	C2,3,4	C1,2	
	American Water Testing Company	122 South Union Street	Danville, VA		96-04	C1												
	LabCorp Analytics Laboratory	8040 Villa Park Drive, Suite 250	Richmond, VA		98-10			C1234	C	C	C123456	C1,2	C1,2		C	C2,3,4	C1	
00011*	Inactive																	
	Air, Water & Soil Laboratories Inc.	2119-A North Hamilton Street	Richmond, VA		98-03										C	C234		
00013*	Alta Analytical Laboratory, Inc.	5070 Robert J. Matthews Pkwy	El Dorado Hills, CA		98-07												C4	
00014*	Anaconda, Inc.	730 FM 1959	Houston, TX		98-07			C1234				C1,2			C	C234	C2,3	
	Aqua-Air Laboratory, Inc.	627 Dice Street, P.O. Box 4006	Charlottesville, VA		98-05	C2,4		C1,4		C	C1,6							
00016*	Aqua Tech Environmental Consultants, Inc	1776 Marion Waldo Road	Marion, OH	43301-0436	98-07			C1234	C	C	C123456							
00017*	Aqua Tech Environmental Consultants, Inc	St Rt 100, PO BOX 76	Melmore, OH	44845-9999	98-07							C1234	C12345	C1,2	C	C2,3,4	C123	
00018*	Burlington Research, Inc.	1302 Belmont Street	Burlington, NC	27215-6935	98-07	C2,3,5		C1234	C	C	C1							
00019*	Inactive																	
	B & B Laboratory	316 E. Third Street	Chase City, VA		96-09	C4												
00021*	Inactive																	
	Atlantic Environmental Laboratory Inc	825 Grove Road Suite 14	Midlothian, VA		97-03	C4												
	Applied Environmental Inc.	11800 Sunrise Valley Dr., Suite 1200	Reston, VA		97-07	C4												
00024*	Hygeia Laboratories	1300 Williams Drive, Suite A	Marietta, GA	30066-6299	98-07			C1234	C		C1235	C1,2	C1,2		C	C2,3,4	C1	
	Big Stone Gap WTP	505 E. Fifth Street, South	Big Stone Gap, VA		96-06	C3												

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00026*	Analytical Services Inc	110 Technology Parkway	Norcross, GA		98-07			C1234	C	C	C123456	C1,2	C1,2	C1,2	C	C2,3,4	C123	
00027*	Water Tech Labs, Inc.	P.O. Box 1056	Granite Falls, NC		98-07	C2,3,5												
00033*	Universal Laboratory	20 Research Drive	Hampton, VA		98-06	C2,5		C1234	C	C	C123456				C	C2,3,4		
	American Technical & Analytical Services Inc	875 FeeFee Road	Maryland Heights, MO		98-07							C1,2						
	Blacksburg-Christiansburg VPI Water Auth	3515 Peppers Ferry Road	Radford, VA		98-07	C2,5												
	Bristol Virginia Utilities, WTP	22479 Watauga Road	Abingdon, VA	24211-7065	98-06	C3												
	Biotech Laboratory	1225 Choptank Court	Colonial Heights, VA		97-06	C2												
00042*	Test America Inc.-Orlando Division	4310 East Anderson Road	Orlando, FL		98-07			C1234	C	C	C1235	C1234	C12345	C1	C	C2,3,4	C123	
00043*	Inactive																	
	MTI Nuclear Environmental Laboratory Services	P.O. Box 11165 Mt Athos Road	Lynchburg, VA		97-04			C1							C	C2,3,4		
	Carvins Cove Filter Plant	541 Luck Avenue, Suite 118	Roanoke, VA		98-08	C2,5												
00046*	Inactive																	
00047*	Burgess & Niple Ltd	5085 Reed Road	Columbus, OH		98-07	C2		C123	C	C	C1,3	C1,2			C	C234	C123	
00048*	Inactive																	
	Central Virginia Lab & Consultants	P.O. Box 10938, 3101 Odd Fellows Road	Lynchburg, VA		98-04	C2		C1234	C	C	C123456	C1,2	C1,2		C	C2,3,4	C1	
	Inactive																	
	Campbell County Utility & Service Authority	Otter River-PO Box 178	Evington, VA		96-09	C3												
00052*	Ceimic Corporation	10 Dean Kanuss Drive	Narrangansett, RI		98-07			C1234	C	C	C123456	C1,2	C1,2		C	C2,3,4	C1,2	
00053*	Chemical Solutions, Limited	114 E. Keller Street	Mechanicsburg, PA		98-09			C1234										
00054*	CTL Engineering Inc.	2860 Fisher Road	Columbus, OH		98-11				C	C/								
	Chesapeake Public Utilities	3550 S. Battlefield Blvd.	Chesapeake, VA		97-09	C1,3		C1234	C		C1,5,6				C			
00056*	Inactive																	
	Chesterfield Co. Utilities Section	13400 Hull Street Road	Midlothian, VA		97-06	C2,3,5		C1,4	C	C	C1,6				C			
	City of Richmond WTP	1400 Brander Street	Richmond, VA	23224-2399	96-11			C124										
00063*	Community Environ. Labs Inc.	1202 Technology Drive Suite F	Aberdeen, MD		98-09	C235				C/								



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	Clifford, G. W. & Associates	150C Olde Greenwich Drive	Fredericksburg, VA		98-03	C1,5		C1										
	Coastal Bioanalysts, Inc.	P.O. Box 626	Gloucester Point, VA		97-07	C2												
	Environmental & Toxicology International	11244 Waples Mill Road Suite H-2	Fairfax, VA		96-11	C4												
00072*	Inactive																	
	Town of Culpeper Water Pollution Control Facility	118 West Davis Street	Culpeper, VA		96-12	C5												
	City of Danville Wtr & WW Treatment Plant	279 Park Avenue	Danville, VA		98-05	C3												
00077*	Inactive																	
00078*	Inactive																	
	Environmental Monitoring, Inc.	P.O. Box 1477	Coeburn, VA		98-04			C1234			C1							
	DCLS-Consolidated Laboratory-State	1 N. 14th Street	Richmond, VA			C1,5												
	DCLS-Consolidated Laboratory-State	1 N. 14th Street	Richmond, VA					C1234	C	C	C123456							
	DCLS-Consolidated Laboratory-State	1 N. 14th Street	Richmond, VA									C1234	C123	C1	C	C1234	C123	
	DCLS-Consolidated Laboratory-State	1 N. 14th Street	Richmond, VA															C
	DCLS-Shenandoah Microbiological Laboratory	77 Court Lane	Luray, VA		95-10	C1,3												
	Enviro Compliance Laboratories, Inc.	10357 Old Keeton Road	Glen Allen, VA		98-09	C5		C1234	C	C	C123456				C			
	Environmental Management Services	P.O. Box 784	Wytheville, VA		96-09	C2,5												
00103*	Inactive																	
	Enviro Tech Mid-Atlantic	1861 Pratt Drive	Blacksburg, VA		96-12	C2												
	DCLS-Southwest Regional Microbiological Lab	165 East Valley Street	Abingdon, VA		98-05	C1,3												
00106*	ETC	2924 Walnut Grove Road	Memphis, TN		98-07			C1234	C	C	C123456	C1,2	C1	C1,2	C	C2,3,4	C1	
00107*	Water Testing Laboratories of Maryland, Inc.	P.O. Box 712	Stevensville, MD		98-07	C2,5		C1	C	C								
00108*	Environmental Testing Labs, Inc	208 Route 109	Farmingdale, NY		98-07		C	C1234			C123456				C	C2,3,4		
00109*	Environmental Science Corp.	12065 Lebanon Road	Mt. Juliet, TN	37122-2605	98-07			C1234	C	C	C1,2,3	C1	C1	C1,2	C	C2,3,4	C1	

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00111*	Inactive Environmental Physics, Inc.	P.O. Box 30712	Charleston, SC		98-07													C
00112*	Envirosystems, Inc.	9200 Rumsey Road Suite B102	Columbia, MD		98-07			C123		/C	C2	C1,2	C1,2		C	C2,3,4	C1	
00113*	Inactive Inactive																	
	ESS Laboratories	218 North Main Street	Culpeper, VA		97-12	C2			C	C	C123456							
	Environmental Engineering Laboratory Inc	712 Gum Rock Court	Newport News, VA		97-04				C		C1,6				C			
00117*	Inactive Q Biochem, L.L.C.	1401 Municipal Road, N.W.	Roanoke, VA		98-10			C1										
	Environmental Systems Service, LTD	500 Stone Street	Bedford, VA		98-10	C2												
	Fairfax Co. Health Dept. Laboratory	10777 Main Street, Suite 301	Fairfax, VA	22030-6903	97-07	C1,3		C1234	C	C	C1,5							
00121*	E A Laboratories	19 Loveton Circle, Hunt Valley/Loveton Center	Park, MD		98-07			C123	C	C	C2	C1234	C1,2,5		C	C2,3,4	C2,3	
	Environmental Options	P. O. Box 879	Rocky Mount, VA		96-12	C2												
	Environmental Directions Inc.	2727 Plantation Road	Roanoke, VA		97-04	C4												
00124*	Ecology and Environment, Inc.	4493 Walden Avenue	Lancaster, NY		98-07			C1234	C	C	C1235	C1,2	C1,2	C1,2		C2,3,4	C1,2,3	
	Fairfax Co. Water Authority, Corbalis WTP	1250 Holly Knoll Drive	Herndon, VA		98-03	C2,3		C1234	C	C	C13456				C	C2,3,4		
00127*	Environmental Health Laboratories	110 South Hill Street	South Bend, IN		98-07			C123	C	C	C2,3	C123	C12345	C1,2	C	C2,3,4	C123	
00128*	Severn Trent EnviroTest	315 Fullerton Avenue	Newburgh, NY		98-07			C1234	C	C	C123456	C1,2	C1,2		C	C2,3,4	C123	
	Inactive																	
	Farmville WTP-Town of Farmville	P.O. Drawer 368	Farmville, VA		98-05	C3												
	EnviroCompliance Laboratories Inc.	Route 11, Mid-Valley Lane, PO Box 919	Verona, VA		98-11	C5		C1234	C	C	C1356							
00141*	Fredericktowne Labs, Inc.	P.O. Box 244	Myersville, MD		98-07	C3,5												
	Friend Lab Inc	One Research Circle	Waverly, NY		98-07			C1234	C	C	C1235	C1234	C1,2	C1,2	C	C2,3,4	C1,2,3	
00145*	Free-Col Laboratories	P.O. Box 557, Cotton Road	Meadville, PA	16335-0557	98-07	C3		C1234	C	C	C123	C1,2	C1234	C1,2	C	C2,3,4	C123	
	Froehling & Robertson, Inc.	3015 Dumbarton Road	Richmond, VA		98-03	C4		C1234	C	C	C1246				C			



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00151*	General Engineering Laboratories	P.O. Box 30712	Charleston, SC		98-07			C1234	C	C	C123456							
00152*	Gascoyne Laboratories, Inc.	2101 Van Demon Street, Holabird Industrial Park	Baltimore, MD		98-07	C2,5		C1234	C	C	C2456				C	C2,3,4		
	City of Galax WTP	123 N. Main Street, PO Box 1187	Galax, VA		98-06	C5												
00154*	Geochemical Testing	2005 N. Center Avenue	Somerset, PA		98-07			C1234	C	C	C123	C1,2	C1,2		C	C2,3,4	C1	
00155*	Harbor Branch Environmental Laboratory	5600 U.S. 1 North	Ft. Pierce, FL		98-07			C1234	C	C	C1235	C1234	C1235	C1,2	C	C2,3,4	C1,2,3	
	HP Environmental Inc.	104 Elden Street	Herndon, VA		98-07	PC2												
00157*	Severn Trent Labs (MA)	149 North Rangeway Road	North Billerica, MA		98-07		C	C1234	C	C	C123456				C	C2,3,4		
00158*	Inactive																	
	Inactive																	
	Hanover Dept. of Public Utilites, Doswell WTP	10076 Kings Dominion Blvd	Doswell, VA		97-08	C2												
	Quanterra Inc.	5910 Breckenridge Parkway, Suite H	Tampa, FL		98-07			C1234	C	C	C1,3,5				C	C2,3,4	C1	
00164*	Inactive																	
00165*	Quanterra, Inc.	5815 Middlebrook Pike	Knoxville, TN		98-07			C1234	C	C	C12345						C4	
00167*	Quanterra, Inc.	450 Old William Pitt Hwy	Pittsburg, PA		98-07			C1234	C	C	C1,2	C1,2	C1		C	C2,3,4	C1	
00170*	Law Environmental Inc.	3355 McLemore Drive	Pensacola, FL		98-07			C1234		C	C123456	C1,2	C1,2	C1,2	C	C234	C123	
00173*	Inactive																	
00174*	KNL Laboratory Services	P.O. Box 1833	Tampa, FL		98-09													C
	Henrico Wastewater Facility Laboratory	9101 WRVA Road	Richmond, VA		98-10	C1PC4		C1										
00177*	Inactive																	
00178*	Quanterra, Inc.	880 Riverside Pkwy West	Sacramento, CA		98-07			C1234	C	C	C123456				C	C2,3,4	C4	
00179*	Inactive																	
	Jennings Laboratories, Inc.	1118 Cypress Avenue	Virginia Beach, VA		98-06	C3		C124	C	C	C123456				C			
00181*	Inactive																	
	John Flannagan Water Authority Laboratory	Rt 1, Box 265	Haysi, VA		97-12	C3												
	Joiner Micro Laboratories, Inc.	77-F West Lee Street	Warrenton, VA		97-07	C2,5												
00184*	GPL Laboratories, LLP	202 Perry Parkway	Gaithersburg, MD		98-07			C1234	C	C	C2	C1,2	C1,2		C	C2,3,4	C1,2	

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	Lapteff Associates	14511 Telegraph Road	Woodbridge, VA		97-10	C3,5												
00186*	Inactive																	
00187*	Lancaster Laboratories, Inc.	2425 New Holland Pike	Lancaster, PA		98-07			C1234	C	C	C123	C1234	C1,2	C1,2	C	C2,3,4	C123	
00188*	Inactive																	
00189*	Mitkem Corporation	175 Metro Center Blvd	Warwick, RI		98-07			C1234	C	C	C1236	C1234	C1,2	C1,2	C	C234	C1,2	
	City of Lynchburg Utilities Division	525 Taylor Street	Lynchburg, VA		98-09	C3												
00191*	Metropolitan Environ. Testing Services, Inc.	179 Smallwood Village	Waldorf, MD		98-07	C2		C1		C								
00192*	Maryland Spectral Services Inc.	1500 Caton Center Drive, Suite 6	Baltimore, MD		98-07							C1234	C5		C	C234	C1	
	Manassas City of Water and Sewer Department	8500 Public Works Drive, P.O. Box 560	Manassas, VA		97-11	C3,5												
	Marine Chemist Service, Inc	11850 Tugboat Lane	Newport News, VA		98-06			C1										
	Marion, Town of Water Plant	P.O. Box 1005	Marion, VA		96-06	C3												
00203*	Martel Laboratory Services, Inc.	1025 Cromwell Bridge Road	Baltimore, MD		98-07	C235		C123	C	C	C2	C1,2	C1,2	C1,2	C	C2,3,4	C2,3	
00204*	Penniman & Browne, Inc.	P.O. Box 65309	Baltimore, MD		98-07	C2,5		C123	C	C								
	City of Martinsville Water Purification Plant	302 Clearview Drive	Martinsville, VA		98-05	C3												
00206*	Inactive																	
00207*	Merck & Co., Inc. Environmental Laboratory	Sunny Pike	West Point, PA		98-07			C124							C	C2,3,4		
	Microbac Laboratories, Inc.	604 Morris Drive	Newport News, VA		93-10	NC												
00209*	Microbac Laboratories Inc.	Erie Testing Division, 1962 Wager Road	Erie, PA		98-07							C1,2	C1,2,4	C1,2	C	C2,3,4	C123	
00210*	Montgomery Laboratories	555 E. Walnut Street, P.O. Box 7009	Pasadena, CA	91109-7009	98-07		C	C1234	C	C	C123456	C1234	C12345	C1	C	C2,3,4	C123	
00212*	Inactive																	
00213*	Pace Inc.	9800 Kinsey Avenue, Suite 100	Huntersville, NC		98-07			C1234	C	C	C123456				C			
00214*	Inactive																	
	Mid-Atlantic Laboratories, Inc.	14294 Big Timber Road	King George, VA		97-05	C2												
00216*	M. J. Reider Associates, Inc.	107 Angelica Street	Redding, PA		98-07	C3		C1234	C	C	C123	C1234	C1245		C	C2,3,4	C123	

VIRGINIA DEPT OF HEALTH  
DIVISION OF WATER SUPPLY ENGINEERING  
APPROVED LABORATORIES  
July 1, 1998-June 30, 1999

LAB ID NO.	LAB NAME	ADDRESS	CITY, STATE	ZIPCODE	CERT DATE	MIC 1,2,3,4,5	A	TM 1,2,3,4	F	NO3/ NO2	INORGANIC 1,2,3,4,5,6	P 1,2,3,4	H 1,2,3,4,5	PCB 1,2	THM	VOC 1,2,3,4	SOC 1,2,3,4	RAD
00218*	Intertek Testing Services Environmental Labs	1089 East Collins	Richardson, TX		98-07			C1234	C	C	C1356				C	C2,3,4		
	Newport News Public Utilities	3629 George Washington Memorial Highway	Yorktown, VA		97-10	C3		C1234	C	C	C123456				C			
	Norfolk-Moore's Bridge, Norfolk Public Util.	6040 Waterworks Road	Norfolk, VA		97-10	C3		C1234	C	C	C1456				C	C2,3,4		
	Norfolk Naval Shipyard	Building 184, Code 134.2	Portsmouth, VA		98-10	C3												
	Paradigm Analytical Labs Corp	2627 Northchase Pkwy, SE	Wilmington, NC		98-10												C4	
	Primary Corporation	3302 Deepwater Terminal Road	Richmond, VA		97-04			C1234							C	C2,3,4		
	Prince William Co. Srvs Authority Laboratory	P.O. 2266	Woodbridge, VA	22193-0266	96-08	C3		C1,4		C	C1				C	C2,3,4		
	Oakwood Scientific Laboratory	7102 Pole Green Road	Mechanicsville, VA		97-12	C5												
	Occoquan Monitoring Laboratory	9408 Prince William Street	Manassas, VA		98-04			NC										
00244*	O'Brien and Gere Laboratories, Inc.	5000 Brittonfield Parkway, Suite 300	Syracuse, NY		98-07			C1234	C	C	C1356	C1	C1		C	C2,3,4		C
	Olver, Inc.	1116 S. Main Street	Blacksburg, VA		98-09	C3,5		C1234	C	C	C123456							
	P. M. Brooks Associate	3910 Old Buckingham Road	Powhatan, VA	23139-0418	96-11	C4												
00248*	Florida RadioChemistry Services Inc.	820 Humphries Avenue	Orlando, FL		98-07													C
00249*	WSSC, Office of Laboratory Services	14501 Sweitzer Lane	Laurel, MD	20707-5902	98-07	C2,5		C123	C						C	C2,3,4		
	Southside Regional Medical Center	801 South Adams Street	Petersburg, VA		96-12	C2												
00251*	Pace Analytical Services	1700 Elm Street, Suite 200	Minneapolis, MN		98-07			C1234	C	C	C2,3				C	C2,3,4		
00252*	Core Lab	7726 Moller Road	Indianapolis, IN		98-07												C4	
	Portsmouth City of, Dept. of Public Utilities	P.O. Box 490	Portsmouth, VA		97-11	C3					C1,5,6							
	Shenandoah Bacti Lab	434 Reynolds Road	Cross Junction, VA		96-06	C2												
00259*	Inactive																	
	Pulaski County water Treatment Plant	143 3rd Street, NW	Pulaski, VA		98-07	C5												
	Pulaski Filter Plant	Box 660	Pulaski, VA		96-09	C5												
	Radford Army Ammo Plant	U. S. Army (Alliant Techsystems), PO Box 1	Radford, VA	24141-0100	96-07	C3												

VIRGINIA DEPT OF HEALTH  
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	Radford, City of Water Treatment Plant	20 Forest Avenue	Radford, VA	24141-4411	98-07	C5												
00277*	PBS & J Environmental Labs	6635 E. Colonial Drive	Orlando, FL		98-07			C1234	C	C	C12345	C1234	C12345	C1	C	C2,3,4	C123	
00278*	Recra Environmental, Inc.	10 Hazelwood Drive, Suite 106	Amherst, NY		98-07			C1234	C	C	C12356	C1,2	C1	C1,2		C2,3,4		
	Roanoke County Water Quality Laboratory	1206 Kessler Mill Road	Salem, VA		97-11	C2,5		C1										
	Reed, James R. & Associates, Inc.	11864 Cannon Blvd, Suite 103	Newport News, VA		98-07	C3,4		C1234	C	C	C1256	C1,2	C1,2		C	C2,3,4	C123	
00281*	REI Consultants Inc.	P.O. Box 286	Beaver, WV		98-07			C123	C	C	C2	C1234	C12345	C1,2	C	C2,3,4	C123	
00282*	Katahdin Analytical Services	340 Country Road #5	Westbrook, ME		98-07			C1234	C	C	C1234	C1,2			C	C2,3,4		
00285*	Research & Analytical Laboratories, Inc.	P.O. Box 473, 106 Short Street	Kernersville, NC		98-07	C2,5		C1234	C	C	C1234	C1234	C12345	C1,2	C	C2,3,4	C123	
	Richmond Purification Plt Dept of Public Util.	3920 Douglasdale Road	Richmond, VA		98-07	C2,3			C	C	C13456							
	Rivanna Water Treatment Plant	P.O. Box 18	Charlottesville, VA		97-04	C4		C1,4										
	Phase Separation Science Inc.	6630 Baltimore National Pike	Baltimore, MD		98-11			C123	C	C		C1,2		C1,2	C	C2,3,4	C2,3	
00297*	R J Lee Group, Inc.	350 Hochberg Road	Monroeville, PA		98-07		C	C123										
00298*	Inactive																	
	Salem Water Department	746 W. Main Street, P.O. Box 869	Salem, VA		98-07	C5												
00302*	Savannah Lab. & Environmental Services, Inc.	5102 LaRouche Avenue	Savannah, GA		98-07	C234 5		C1234	C	C	C12356	C1,2	C1,2	C1,2	C	C2,3,4	C1,2	
00303*	Scientific Laboratories Inc.	13635 Genito Road	Midlothian, VA		98-07		C											
	Shellfish Sanitation (VDOH)	P.O. Box 88	Accomac, VA		96-09	C1												
	Shellfish Sanitation (VDOH)	401A Colley Avenue, Room 212	Norfolk, VA		98-05	C1												
	Shellfish Sanitation (VDOH)	P.O. Box 241	White Stone, VA		96-08	C1,5												
	Schneider Laboratories, Inc.	2512 West Cary Street	Richmond, VA	23220-5117	96-07	C2		C1234										
	South Boston City of Filter Plant	100 Leigh Street, P.O. Box 417	South Boston, VA		98-05	C3												
00322*	Southwest Laboratory of Oklahoma, Inc.	1700 West Albany	Broken Arrow, OK		98-07			C1234	C	C	C123456				C	C2,3,4	C4	
00323*	Specialized Assay	P.O. Box 40566	Nasheville, TN	37204-0566	98-07			C1234	C	C	C123	C1,2	C1,2	C1,2	C	C2,3,4	C123	

VIRGINIA DEPT OF HEALTH  
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00327*	Staunton, City WTP Inactive	P.O. Box 58	Staunton, VA		97-10	C4												
	Suffolk, City of Water Plant	P.O. Box 2368	Suffolk, VA		97-11	C3												
	TC Analytics, Inc.	1200 Boissevain Avenue	Norfolk, VA		98-06			NC										
00334*	Inactive																	
00335*	Tri-State Analytical Laboratory	P.O. Box 2024	Johnson City, TN		98-07			C1234	C	C	C123	C1,2	C1,2		C	C2,3,4	C1,2,3	
00336*	Commerical Testing & Engineering Company	Environmental Laboratory Svcs, 1258 Greenbrier St.	Charleston, WV		98-07			C123	C	C	C2	C1,2	C1,2		C	C2,3,4	C1,2	
	Town of Leesburg	P.O. Box 88	Leesburg, VA		96-05	C2,5												
00341*	Triangle Laboratories of RTP, Inc.	801 Capitola Drive	Durham, NC		98-07												C4	
	Upper Smith River Water Filtration Plant	590 Philpott Drive	Bassett, VA		97-10	C3,5												
00343*	Armstrong Laboratory/OEHD		Brooks AFB, TX	78235-5000	98-07			C1234	C	C	C123456	C1,2	C2345	C1,2	C	C2,3,4	C1,2,3	C
00345*	U. S. Army Ctr for Health Protection &	Preventive Medicine (Provisional), Aberdeen	Proving Ground, MD	21010-5422	98-07			C123	C	C	C2	C1,2	C1,2		C	C2,3,4	C1,2,3	
	U.S. Army HQ Ft. Monroe (Big Bethel WTP)	Attn: ATZG-IS	Ft. Monroe, VA	23651-6000	97-08	C3												
00355*	Inactive																	
	U.S. Navy Environmental Preventive Medicine	Unit #2, 1887 Powhatan Street	Norfolk, VA	23511-3394	98-05	C3												
	U. S. Navy Public Works Center	Code 930 Bldgz Z-140, 9742 Maryland Avenue	Norfolk, VA	23511-3095	96-07	C3		C1			C1,6							
00367*	Inactive																	
	VDACS Regional Diagnostic Laboratory	116 Reservoir Street	Harrisonburg, VA		97-11	C3												
	VDACS Regional Diagnostic Laboratory	34591 General Mahone Blvd.	Ivor, VA		97-11	C5												
	VDACS Regional Diagnostic Laboratory	4832 Tyreanna Road	Lynchburg, VA		98-09	C5												
	VDACS Regional Diagnostic Laboratory	234 W. Shirley Avenue	Warrenton, VA		98-10	C3												
	VDACS Regional Diagnostic Laboratory	Box 738	Wytheville, VA		98-07	C3												
00395*	V.O.C. Analytical Labs, Inc.	3231 NW 7th Avenue	Boca Rapon, FL		98-07			C1234	C	C	C1235	C1,2		C1	C	C2,3,4	C123	

VIRGINIA DEPT OF HEALTH  
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	Virginia American Water Company	2223 Duke Street	Alexandria, VA		98-07	PC3												
	Virginia American Water Company	P.O. Box 60	Hopewell, VA		98-09	PC3												
	Virginia Beach City of- Water Testing Lab	1925 Landstown Road Municipal Center	Virginia Beach, VA		97-08	C3												
	Virginia Power Systems Laboratory	11201 Old Stage Road	Chester, VA		96-11			C1										
00413*	Water Techn & Control Inc.	642 Tamco Road	Reidsville, NC		98-07	C2,3, 5												
	Washington County Service Authority	P.O. Box 1447, Court Street	Abingdon, VA		96-06	C3												
00416*	Water Testing Labs	P.O. Box 4547	Salisbury, MD	21803-4547	98-09	C2,5				C/								
00417*	Natl Testing Lab. Inc (Ypsilanti,MI)	556 South Mansfield Street	Ypsilanti, MI		98-07	C2,3		C1234	C	C	C3	C1,2	C1,2	C1,2	C	C2,3,4	C1	
00418*	Inactive																	
00419*	RECRA LabNet (Philadelphia)	208 Welsh Pool Road	Lionville, PA	19341-1333	98-07			C1234	C	C	C123	C1,2	C1,2		C	C2,3,4	C123	
	Winchester, City of Water Treatment Plant	P. O. Box 36	Middleton, VA		95-10	C3												
00421*	Analytical Laboratory Service, Inc.	34 Dogwood Lane	Middletown, PA		98-07			C1234	C	C	C1234	C1234	C1,2	C1,2	C	C2,3,4	C123	
00422*	RECRA LabNet (Chicago)	2417 Bond Street	University Park, IL		98-07			C1234	C	C	C123456				C	C2,3,4	C1	
	Water Chemistry Inc.	P.O. Box 4273	Roanoke, VA		98-10	C2,5		C1,4	C	C	C12345							
00424*	Water Environmental Services, Burlington	370 West Meadow Road	Eden, NC		98-07	C3,5												
	Wytheville, Town of	P.O. Drawer 533	Wytheville, VA	24382-0533	97-12	C3												
00426*	Inactive																	
00427*	Inactive																	
	Envirolytics, Inc.	6700 Hurricane Road	Wise, VA		95-08	NC												
00430*	Zenon Environmental Laboratories	5555 North Service Road, Burlington	Ontario, Canada	L7L5H7	98-07			C4			C13456						C4	

Commonwealth of Virginia  
Department of General Services  
Division of Consolidated Laboratory Services

Annual Certified Parameter List  
July 1, 1996 - June 30, 1997

Lab Name & ID Number

**Microbiology:**

C<sub>1</sub> - P/A  
C<sub>2</sub> - ONPG-MUG  
C<sub>3</sub> - MF  
C<sub>4</sub> - Colisure Test  
C<sub>5</sub> - FT  
Fecal Coliform  
Heterotrophic Plate Count.

**Inorganic Chemical:**

A:	Asbestos
Trace Metal 1:	Lead, Copper
Trace Metal 2:	Arsenic, Barium, Cadmium, Chromium, Mercury, Selenium
Trace Metal 3:	Antimony, Beryllium, Nickel, Thallium
Trace Metal 4:	Aluminum, Iron, Manganese, Molybdenum, Silver, Sodium, Vanadium, Zinc
F:	Fluoride
NO <sub>3</sub> /NO <sub>2</sub> :	Nitrate, Nitrite
Inorganic 1:	Alkalinity, Calcium, pH, T. Dissolved Solids
Inorganic 2:	Cyanide
Inorganic 3:	Sulfate
Inorganic 4:	Orthophosphate
Inorganic 5:	Chloride, Hardness
Inorganic 6:	Conductivity, Turbidity

**Organic Chemical:**

Pesticides 1:	Alachlor, Atrazine, Chlordane, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, Toxaphene
Pesticides 2:	Endrin, Hexachlorobenzene, Hexachlorocyclopentadiene, Simazine
Pesticides 3:	Carbofuran, Oxamyl (Vydate)
Pesticides 4:	Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide
Herbicides 1:	2,4-D, 2,4,5-TP (Silvex), Pentachlorophenol
Herbicides 2:	Dalapon, Dinoseb, Picloram
Herbicides 3:	Diquat
Herbicides 4:	Endothall
Herbicides 5:	Glyphosate
PCBs 1:	Aroclor
PCBs 2:	Decachlorobiphenyl
Trihalomethanes	
VOCs 1:	Phase I
- VOCs 2:	Vinyl Chloride
VOCs 3:	Phase I, Phase II
VOCs 4:	Phase V
SOCs 1:	Ethylene dibromide (EDB), Dibromochloropropane (DBCP)
SOCs 2:	Benzo(A)pyrene
SOCs 3:	Bis(2-ethylhexyl) adipate, Bis (2-ethylhexyl) phthalates
SOCs 4:	2, 3, 7, 8-TCDD (Dioxin)

**Radiochemical:**

Gross Alpha, Gross Beta, Iodine-131, Radium-226, Radium-228, Strontium-89, Strontium-90, Tritium, Uranium, Photon Emitters

\* Denotes Provisional Certification

## DRINKING WATER STANDARDS

### I. Inorganics

#### PMCLs (mg/L)<sup>1</sup>

•Antimony	0.006 mg/L	•Copper	1.3 mg/L AL <sup>3</sup>	•Nitrite-N	1 mg/L
•Arsenic	0.05 mg/L	•Cyanide	0.2 mg/L	•Nitrate-N +	
•Asbestos	7 MFL <sup>4</sup>	•Fluoride	4.0 mg/L	Nitrite-N	10 mg/L
•Barium	2.0 mg/L	•Lead	0.015 mg/L AL <sup>3</sup>	•Selenium	0.05 mg/L
•Beryllium	0.004 mg/L	•Mercury	0.002 mg/L	•Thallium	0.002 mg/L
•Cadmium	0.005 mg/L	•Nickel	0.1 mg/L		
•Chromium	0.1 mg/L	•Nitrate-N	10 mg/L		

#### SMCLs (mg/L)<sup>2</sup>

•Aluminum	0.05 - 0.2 mg/L	•Iron	0.3 mg/L	•Sulfate	250 mg/L
•Chloride	250 mg/L	•Manganese	0.05 mg/L	•Zinc	5.0 mg/L
•Fluoride	2.0 mg/L	•Silver	0.1 mg/L		

#### General Water Quality Parameters - no limits established

•Alkalinity - total	•Hardness - Ca	•Nitrogen - ammonia
- bicarbonate	- Mg	- TKN
- carbonate	- total	•Phosphate - total
•Calcium	•Hydrogen sulfide	- ortho
•Magnesium	•Silica	•Sodium
•Potassium		

### II. Organics

#### PMCLs (mg/L)

•Alachlor	0.002	•Dichlororethylene (1,1-)	0.007
•Aldicarb	_____	•Dichlororethylene (cis-1,2-)	0.07
•Aldicarb sulfone	_____	•Dichlororethylene (trans-1,2-)	0.1
•Aldicarb sulfoxide	_____	•Dichloromethane	0.005
•Atrazine	0.003	•Dichloropropane (1,2-)	0.005
•Benzene	0.005	•Dinoseb	0.007
•Benzo(a)pyrene (PAH)	0.0002	•Diquat	0.02
•Carbofuran	0.04	•Endothall	0.1
•Carbon tetrachloride	0.005	•Endrin	0.002
•Chlordane	0.002	•Ethylbenzene	0.7
•2,4-D	0.07	•Ethylene dibromide	0.00005
•Dalapon	0.2	•Glyphosate	0.7
•Di(2-ethylhexyl)adipate	0.4	•Heptachlor	0.0004
•Di(2-ethylhexyl)phthalate	0.006	•Heptachlor epoxide	0.0002
•Dibromochloropropane	0.0002	•Hexachlorobenzene	0.001
•Dichlorobenzene o-	0.6	•Hexachlorocyclopentadiene	0.05
•Dichlorobenzene m-	_____	•Lindane	0.0002
•Dichlorobenzene p-	0.075	•Methoxychlor	0.04
•Dichloroethane (1,2-)	0.005	•Monochlorobenzene	0.1



## II. Organics (continued)

### PMCLs (mg/L)

•Oxamyl (Vydate)	0.2	•Toluene	1.0
•Pentachlorophenol	0.001	•Toxaphene	0.003
•Picloram	0.5	•2,4,5-TP	0.05
•Polychlorinated biphenyls	0.0005	•Trichlorobenzene (1,2,4-)	0.07
•Simazine	0.004	•Trichloroethane (1,1,1-)	0.2
•Styrene	0.1	•Trichloroethane (1,1,2-)	0.005
•2,3,7,8-TCDD (Dioxin)	3E-08	•Trichloroethylene	0.005
•Tetrachloroethylene	0.005	•Vinyl chloride	0.002
		•Xylenes	10.0

### SMCLs - None

### General Water Quality Parameters - None

## III. Physical Parameters

### PMCLs - None

### SMCLs (mg/L)

•Color	15 color units	•Odor	3 TON
•Corrosivity	Non-corrosive	•pH	6.5 to 8.5 units
•Foaming agents	0.5	•Total dissolved solids	500

### General Water Quality Parameters

•Turbidity

## IV. Radiological

### PMCLs

•Beta particle and photon activity	4 mrem (proposed)
•Gross alpha particle activity	15 pCi/L
•Total radium (Ra 226 + Ra 228)	5 pCi/L

### SMCLs - None

### General Water Quality Parameters - None

- 
- (1) PMCL = primary maximum contaminant level.  
(2) SMCL = secondary maximum contaminant level.  
(3) AL = action level  
(4) MFL = million fibers per liter

## WELL DEDICATION

\_\_\_\_\_, a Virginia Corporation, does dedicate that tract or parcel of real estate situated, lying and being in the \_\_\_\_\_ County, Virginia, more particularly described by deed and plat of survey of record in Deed Book \_\_\_\_\_ Pages \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_, of the Clerk's Office of the Circuit Court of \_\_\_\_\_ County, Virginia, and being the identical real estate which said corporation acquired by grant with General Warranty of Title and Modern English covenants from \_\_\_\_\_. Said dedication being to establish the aforesaid area for water supply use only, and the said \_\_\_\_\_ agrees that only appurtenances pertinent to the water supply system will be constructed in said area dedicated and that said lot (number \_\_\_\_\_) will not be used for human habitation or other sources of contamination.

The full interest and control of the aforesaid area dedicated shall remain with the \_\_\_\_\_ and this instrument is solely for the purpose of assuring the Department of Health of the Commonwealth of Virginia as to the matters hereinabove set forth so long as said parcel is used for a water supply system; and this dedication shall be null and void and of no further effect should the well on the said premises be abandoned and the use thereof for a water supply system cease.

WITNESS the following signatures and seal this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

BY: \_\_\_\_\_  
ATTEST: \_\_\_\_\_

I, \_\_\_\_\_, a Notary Public for the County aforesaid in the State of Virginia do certify that \_\_\_\_\_, whose names are signed to the writing above, bearing date on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, have acknowledged the same before me in my County aforesaid.

Given under my hand this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
Notary Public

My Commission Expires \_\_\_\_\_, 19\_\_\_\_.

ENCLOSURE 3

SUBJECT: \* County  
Water - \*

\*

Dear \*

This letter refers to my \* inspection of a well site with \* to serve \*.

In accordance with 12 VAC 5-590-280 of the Commonwealth of Virginia **Waterworks Regulations** the proposed well site located \*, as shown on the attached well site inspection sketch or topo map, is approved by this Department for the construction of a Class \* well to be utilized as a public drinking water supply. This approval is valid for a period of twelve months. If construction of the well has not commenced by \*, reinspection of the well site will be required. The well lot must be:

- Located to provide a minimum distance of 50 feet between the well and all potential sources of contamination, property lines, and right-of-way or easements on the property
- Graded to divert surface run-off from the well and to prevent ponding on the well lot
- Served by an all-weather access road

[Optional Paragraph]

The requirements for construction and development of new wells are covered in the Commonwealth of Virginia **Waterworks Regulations** 12 VAC 5-590-840. Enclosed is a package of information containing excerpts from the regulations and a summary of new well construction and sampling requirements. Refer to the package cover page for a list of subjects addressed in the package.

Notify this office of the date and time that the well will be grouted. Provide the information as soon as possible so that a member of our staff may be present during grouting.

After well construction, the following must be completed:

- A 48-hour yield and drawdown test
- Sample collection
- A preliminary engineering conference
- Submission of a preliminary engineering report

[Optional Paragraph]

**If the State Lab is to perform the analysis, please contact this office or the Central Office for containers and sampling instructions.** If you will be using a certified private lab, please contact them for containers and any special sampling instructions.

[Optional Paragraph]

The wellhead area has been found to be vulnerable to contamination by synthetic organic chemicals (SOCs) due to \_\_\_\_\_. You will be required to take developmental samples for SOC's tested by EPA Method

Number \_\_\_\_\_. Contact DCLS in Richmond at (804)786-7796 or a certified private laboratory to arrange for analysis of your samples.

[Optional Paragraph]

The new well will be in close proximity to the existing well. If both wells are to be used, a simultaneous 48-hour pump test will be required by this office. This will assure accurate information for determining the safe yield of these sources.

The plans and specifications shall include a copy of the well completion report and yield/drawdown test results, a recorded plat of the well lot, and a recorded dedication document for the well lot. The dedication document shall clearly state that the well lot will be used only for the waterworks appurtenances as long as the lot is being used as part of the waterworks.

Upon receipt of the required documentation and after plans and specifications have been approved, a construction permit will be issued by the State Health Commissioner in accordance with 12 VAC 5-590-230 of the **Waterworks Regulations**. Construction of the waterworks facilities shall not be started until the construction permit has been issued.

[Optional Paragraph]

This waterworks is located in a Groundwater Management Area as declared by the State Water Control Board. Contact the Department of Environmental Quality (DEQ) about the possible need to obtain a Groundwater Withdrawal Permit. The permit will allow withdrawal and use of water from the proposed well. Contact \*, DEQ, Regional Office, for further information concerning the process of obtaining a Groundwater Withdrawal Permit. \* may be reached by telephone at \*.

All water well drillers are required to be licensed by the State Board for Contractors. Do not contract with an unlicensed well driller. You can contact the State Board for Contractors, Virginia Department of Professional and Occupational Regulation, 3600 West Broad Street, Richmond, VA 23230, telephone (804)367-8511 to determine if a well driller is licensed.

If you have any questions, please contact me at this office.

Sincerely,

\*

\*/\*

CC: \* County Health Department  
DEQ - Office of Water Resources Management  
OWP - Central  
County Administrator

# Enclosure 4

**Optimal Procedure for New Well Development.**

**For Field Offices Utilizing DCLS in Luray and Abingdon**

Please contact the laboratory for instruction and procedures.

**For Field Offices Utilizing DCLS in Richmond**

- 1) Well driller contacts the Environmental Engineering Field Office when ready to collect samples
- 2) District Engineer assigns a PWSID (from City County PWSID and Location Codes Table) and Sample Location Code number unique to the sample development and faxes (fax form from page 40 of 43) the information to the central office.
  - a) Information needed on the fax form to process the printing of bacteriological forms
    - i) Name of individual in the field Office making the request\*
    - ii) Name of Field Office\*
    - iii) Telephone and FAX numbers
    - iv) Date of request
    - v) Number of MPN samples requesting\*
    - vi) Type of waterworks
    - vii) City or county the well resides\*
    - viii) Owner's name
    - ix) Assigned PWSID from City and County PWSIDs and Location Codes
    - x) Assigned Location Code - A three digit alpha/numeric code representing the new well\*
    - xi) If applicable existing PWSID and name
    - xii) Name of the person submitting the request to the Field Office\*
    - xiii) Name of the company (typically the well driller) collecting the sample\*
    - xiv) Name of the person that the sampling kit will be delivered\*
    - xv) Address where the sampling kit is to be delivered\*
    - xvi) City state and zip code where the sampling kit is to be delivered\*
    - xvii) Phone number where someone, from the company, can be reached\*
- 3) Central Office will print the bacteriological forms and deliver the printed forms to DCLS for kit packaging and shipping
- 4) District Engineer will track the PWSID and the sample location code via the bacti posting on R&R.
- 5) DCLS will mail postcards results to Environmental Engineering Field Office

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\* Minimum information needed to process bacteriological sampling request.

## FAX

TO: VDH – OWP - Central

Time sensitive transmission, please deliver to first available person: Monte Waugh or Christine Harrison or Joanne Vivas

Notification of Well Development Sample Analyses Request  
for  
Coliform MPN (Method 206-63)

From: \_\_\_\_\_  
VDH - Office of Water Programs  
Field Office Tel. \_\_\_\_\_ FAX \_\_\_\_\_  
Date: \_\_\_\_\_

0 Total Coliform MPN Number Each \_\_\_\_\_  
Well Development Sample Request for a Proposed or Existing:

0 Community      0 NTNC      0 Noncommunity

Public Water Supply in \_\_\_\_\_ City/County  
Owner: \_\_\_\_\_

Assigned PWSID: 000000 Assigned Location Code:           
or new source for existing PWSID:                       
PWS Name (if known): \_\_\_\_\_

Request By : \_\_\_\_\_

Sample Kit Mailing Address:  
Company's Name \_\_\_\_\_  
Company's Contact Person \_\_\_\_\_  
Company's Address \_\_\_\_\_  
Company's City, State Zip Code \_\_\_\_\_  
Phone: \_\_\_\_\_



<b>City and County PWSIDs and Location Codes</b>		
County	PWSID	Location Code
Accomack	3000000	Provided by Field Office
Albemarle	2000000	Provided by Field Office
Alleghany	2000000	Provided by Field Office
Amelia	5000000	Provided by Field Office
Amherst	5000000	Provided by Field Office
Appomattox	5000000	Provided by Field Office
Arlington	6000000	Provided by Field Office
Augusta	2000000	Provided by Field Office
Bath	2000000	Provided by Field Office
Bedford	5000000	Provided by Field Office
Bland	1000000	Provided by Field Office
Botetourt	2000000	Provided by Field Office
Brunswick	5000000	Provided by Field Office
Buchanan	1000000	Provided by Field Office
Buckingham	5000000	Provided by Field Office
Campbell	5000000	Provided by Field Office
Caroline	6000000	Provided by Field Office
Carroll	1000000	Provided by Field Office
Charles City	4000000	Provided by Field Office
Charlotte	5000000	Provided by Field Office
Chesterfield	4000000	Provided by Field Office
Clarke	2000000	Provided by Field Office
Craig	2000000	Provided by Field Office
Culpeper	6000000	Provided by Field Office
Cumberland	5000000	Provided by Field Office
Dickenson	1000000	Provided by Field Office
Dinwiddie	3000000	Provided by Field Office
Essex	4000000	Provided by Field Office
Fairfax	6000000	Provided by Field Office
Fauquier	6000000	Provided by Field Office
Floyd	1000000	Provided by Field Office
Fluvanna	2000000	Provided by Field Office
Franklin	5000000	Provided by Field Office
Frederick	2000000	Provided by Field Office
Giles	1000000	Provided by Field Office
Gloucester	4000000	Provided by Field Office
Goochland	4000000	Provided by Field Office
Grayson	1000000	Provided by Field Office
Greene	2000000	Provided by Field Office
Greensville	3000000	Provided by Field Office
Halifax	5000000	Provided by Field Office
Hanover	4000000	Provided by Field Office
Henrico	4000000	Provided by Field Office
Henry	5000000	Provided by Field Office
Highland	2000000	Provided by Field Office
Isle of Wight	3000000	Provided by Field Office

<b>County (continued)</b>	<b>PWSID</b>	<b>Location Code</b>
James City	3000000	Provided by Field Office
King and Queen	4000000	Provided by Field Office
King George	6000000	Provided by Field Office
King William	4000000	Provided by Field Office
Lancaster	4000000	Provided by Field Office
Lee	1000000	Provided by Field Office
Loudoun	6000000	Provided by Field Office
Louisa	2000000	Provided by Field Office
Lunenburg	5000000	Provided by Field Office
Madison	6000000	Provided by Field Office
Mathews	4000000	Provided by Field Office
Mecklenburg	5000000	Provided by Field Office
Middlesex	4000000	Provided by Field Office
Montgomery	1000000	Provided by Field Office
Nelson	2000000	Provided by Field Office
New Kent	4000000	Provided by Field Office
Northampton	3000000	Provided by Field Office
Northumberland	4000000	Provided by Field Office
Nottoway	5000000	Provided by Field Office
Orange	6000000	Provided by Field Office
Page	2000000	Provided by Field Office
Patrick	5000000	Provided by Field Office
Pittsylvania	5000000	Provided by Field Office
Powhatan	4000000	Provided by Field Office
Prince Edward	5000000	Provided by Field Office
Prince George	3000000	Provided by Field Office
Prince William	6000000	Provided by Field Office
Pulaski	1000000	Provided by Field Office
Rappahannock	6000000	Provided by Field Office
Richmond	4000000	Provided by Field Office
Roanoke	2000000	Provided by Field Office
Rockbridge	2000000	Provided by Field Office
Rockingham	2000000	Provided by Field Office
Russell	1000000	Provided by Field Office
Scott	1000000	Provided by Field Office
Shenandoah	2000000	Provided by Field Office
Smyth	1000000	Provided by Field Office
Southampton	3000000	Provided by Field Office
Spotsylvania	6000000	Provided by Field Office
Stafford	6000000	Provided by Field Office
Surry	3000000	Provided by Field Office
Sussex	3000000	Provided by Field Office
Tazewell	1000000	Provided by Field Office
Warren	2000000	Provided by Field Office
Washington	1000000	Provided by Field Office
Westmoreland	4000000	Provided by Field Office
Wise	1000000	Provided by Field Office
Wythe	1000000	Provided by Field Office
York	3000000	Provided by Field Office

<i><b>Independent City</b></i>	<i><b>PWSID</b></i>	<i><b>Location Code</b></i>
Alexandria	6000000	Provided by Field Office
Bedford	5000000	Provided by Field Office
Bristol	1000000	Provided by Field Office
BuenaVista	2000000	Provided by Field Office
Charlottesville	2000000	Provided by Field Office
Chesapeake	3000000	Provided by Field Office
Clifton Forge	2000000	Provided by Field Office
Colonial Heights	3000000	Provided by Field Office
Covington	2000000	Provided by Field Office
Danville	5000000	Provided by Field Office
Emporia	3000000	Provided by Field Office
Fairfax	6000000	Provided by Field Office
Falls Church	6000000	Provided by Field Office
Franklin	3000000	Provided by Field Office
Fredericksburg	6000000	Provided by Field Office
Galax	1000000	Provided by Field Office
Hampton	3000000	Provided by Field Office
Harrisonburg	2000000	Provided by Field Office
Hopewell	3000000	Provided by Field Office
Lexington	2000000	Provided by Field Office
Lynchburg	5000000	Provided by Field Office
Manassas	6000000	Provided by Field Office
Manassas Park	6000000	Provided by Field Office
Martinsville	5000000	Provided by Field Office
Newport News	3000000	Provided by Field Office
Norfolk	3000000	Provided by Field Office
Norton	1000000	Provided by Field Office
Petersburg	3000000	Provided by Field Office
Poquoson	3000000	Provided by Field Office
Portsmouth	3000000	Provided by Field Office
Radford	1000000	Provided by Field Office
Richmond	4000000	Provided by Field Office
Roanoke	2000000	Provided by Field Office
Salem	2000000	Provided by Field Office
South Boston	5000000	Provided by Field Office
Staunton	2000000	Provided by Field Office
Suffolk	3000000	Provided by Field Office
Virginia Beach	3000000	Provided by Field Office
Waynesboro	2000000	Provided by Field Office
Williamsburg	3000000	Provided by Field Office
Winchester	2000000	Provided by Field Office